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(54) METHOD AND APPARATUS FOR  
ULTRASONIC FLOW-VELOCITY  
MEASUREMENT

## (57) Abstract:

**PROBLEM TO BE SOLVED:** To provide a method and an apparatus for an ultrasonic flow-velocity measurement where the arrival timing of ultrasonic waves for measuring a propagation time difference can be specified with full accuracy, and a full measurement accuracy can be ensured.

**SOLUTION:** The ultrasonic waves are generated and transmitted from an ultrasonic transducer 2 and an ultrasonic transducer 3 arranged on the upstream side and the downstream side of a measuring fluid, flowing in an ultrasonic flow-velocity measuring tube 1, the transmitted ultrasonic waves are received mutually, and a flow velocity is measured, on the basis of the difference in the propagation times between the ultrasonic waves found by comparing respective received waves W. By specifying the time at which second waves in the first half part of the received waves W reach a reference voltage value  $V_{th}$ , their reception is determined, the prescribed number of waves is counted from the time at which the received waves W reach the reference voltage value, and the zero-

crossing point of time of maximum-amplitude waves  $W_m$ , after counting the prescribed number of waves, is regarded as the arrival timing of the ultrasonic waves for measuring the propagation time difference.

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